



AN INTERNET BASED CONTROL AND NAVIGATION SYSTEM FOR SELECTIVE VEHICLES IN EMERGENCY FOR SMART CITIES

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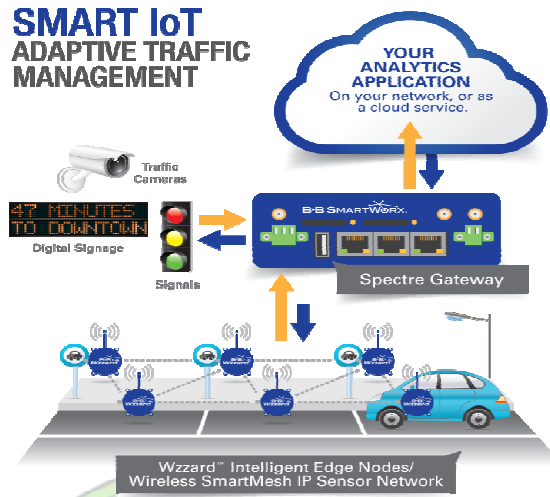
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Abstract---A traffic light is a device for the regulation of traffic between road users, vehicles and pedestrians. The setting and synchronization of traffic lights of an axis or an area are very complex and sometimes unsatisfactory for all or part of them. In addition, according to several studies, traffic lights would be responsible for half of the traffic jams and thus half the pollution and poorly regulated lights can cause the tripling of the fuel consumption, therefore CO₂ emissions and other pollutants emissions, when traffic is cluttered or too sparse. In our solution, we will try to apply the Kerner three-phase traffic theory to realize a synchronized system by establishing an Intelligent Transport System that will provide automatic management of traffic lights, while establishing a communication mode based on the concept of the Internet of Things for various traffic lights controllers to enable them to collaborate. In order to resolve the traffic jam issues, so the reduce of CO₂ emissions and also the mobility metrics like the travel time. This paper is part of a project entitled 'V2IoT' which aims to use the techniques and concepts of the Internet of Things to improve ITS and the vehicular communications, namely, the V2V and the V2I systems within smart cities

Index Terms--- Frame extraction, Graphical User Interface, Motion Detection, Motion identification.

I. INTRODUCTION

Architecture for creating intelligent systems for controlling road traffic is proposed. The system is based on a simple principle of RFID tracking of vehicles, can operate in real-time, improve traffic flow and safety, and fully automated, saving costly constant human involvement. The advantages ITCS can provide were demonstrated in detail which vouches for its effectiveness in traffic management systems. However, it is debatable whether monitoring every vehicle is morally acceptable and whether it is a violation of one of the basic civil rights-privacy. An intelligent traffic control system using RFID.



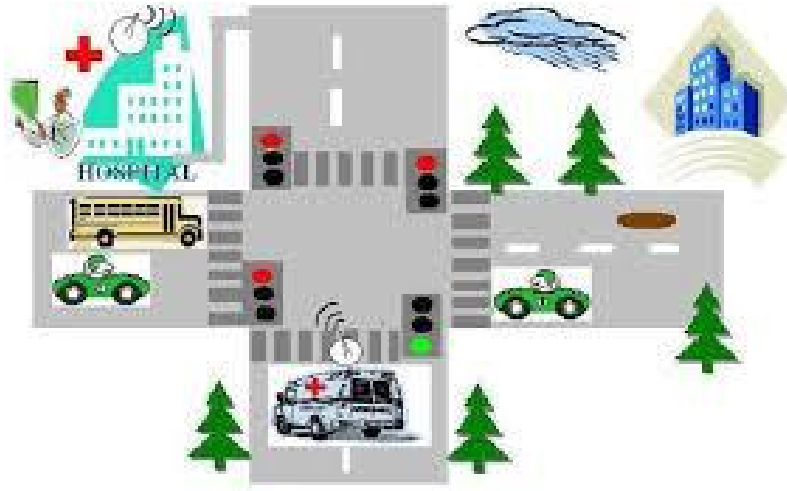
II. EXISTING SYSTEM

There are various methods available for traffic management such as video data analysis, infrared sensors, inductive loop detection, wireless sensor network, etc. All these methods are effective methods of smart traffic management. But the problem with these systems is that the installation time, the cost incurred for the installation and maintenance of the system is very high. Hence a new technology called Radio Frequency Identification (RFID) is introduced which can be coupled with the existing signaling system that can act as a key to smart traffic management in real time.

This new technology which will require less time for installation with lesser costs as compared to other methods of traffic congestion management. Use of this new technology will lead to reduced traffic congestion. Bottlenecks will be detected early and hence early preventive measures can be taken thus saving time and money of the driver was the expectation but it leads to the severe limitations.

III. PROPOSED SYSTEM

As the use of vehicles is increasing day by day so the problem of traffic is arising. The problem that is faced due to more traffic is called as traffic congestion. The objective of this problem is to overcome the problem of traffic congestion so that its negative effects like delays, fuel wastage, wear and tear of vehicles, collisions, traffic jams, frustration of passengers and drivers can be avoided. An IR sensor is placed at some distance from the traffic lights. This IR sensor will detect the traffic on the road and will then label that traffic as light, normal or heavy traffic. The assumption of the traffic by the IR sensor will be taken by the microcontroller and that will be sent to the webpage through the GPRS module installed.



ADVANTAGES

- Real time implementation is possible.
- Possible to modify, track, control and change from remote location using IoT services.
- Lower overhead implementation cost.
- One time investment.
- Avoids misuse of Police, public property and human resources.

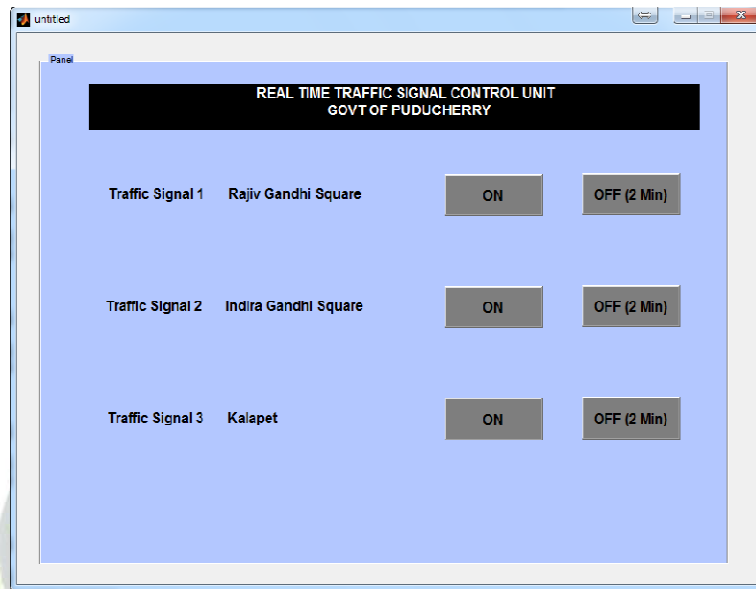
III. LITERATURE SURVEY

In recent years popularity of private cars is getting urban traffic more and more crowded. As result traffic is becoming one of important problems in big cities in all over the world. Some of the traffic concerns are congestions and accidents which have caused a huge waste of time, property damage and environmental pollution. This research paper presents a novel intelligent traffic administration system, based on Internet of Things, which is featured by low cost, high scalability, high compatibility, easy to upgrade, to replace traditional traffic management system and the proposed system can improve road traffic tremendously. The Internet of Things is based on the Internet, network wireless sensing and detection technologies to realize the intelligent recognition on the tagged traffic object, tracking, monitoring, managing and processed automatically. The paper proposes an architecture that integrates internet of things with agent technology into a single platform where the agent technology handles effective communication and interfaces among a large number of heterogeneous highly distributed, and decentralized devices within the IoT. [6] discussed about a system, GSM based AMR has low infrastructure cost and it reduces man power. The system is fully automatic, hence the probability of error is reduced. The data is highly secured and it not only solve the problem of traditional meter reading system but also provides additional features such as power disconnection, reconnection and the concept of power management. The database stores the current month and also all the previous month data for



the future use. Hence the system saves a lot amount of time and energy. Due to the power fluctuations, there might be a damage in the home appliances. Hence to avoid such damages and to protect the appliances, the voltage controlling method can be implemented.

VI.RESULTS



VII.CONCLUSION

In the first phase of the project we planned to develop the MATLAB GUI to provide the input commands from PC to the Microcontroller Unit (Atmega 328P-Pu). This microcontroller provides the high pulse to different input pins of ULN 2003 IC to control the relays which are connected as the switches to Traffic Signals (Bulbs). This work can be done successfully using the combined effort of MATLAB 8.1, Arduino Uno Programmer and Embedded C programming language.

In the second phase of the project the project will be further modified to get controlled from the remote location and Vehicle unit GPS report to navigate the vehicle. Thus proposed system provides significantly improved performance and traffic signal will be controlled and real time navigation will be done with perfect implementation.



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